

On the Vascular System of Anodonta. By Professor LANGER.

The structure of the circulatory system of the Mollusca having given rise to a great number of discussions during the last few years, it is interesting to see new data coming in for the solution of the debate. According to Langer's observations, the vascular system of the *Anodonta* appears to be closed. The walls of the vessels may be demonstrated in most of the organs. The venous system originates in two ways: in certain parts of the animal (the alimentary canal, tentacles, and sexual glands) it is the simple continuation of a superficial capillary network; in other organs (the foot and mantle) it arises from a peculiar tissue (*Schwellgewebe*) capable of dilatation.

The venous blood of the body flows into the median venous sinus discovered by Bojanus, and passing thence through the meshes of the organ which that anatomist regarded as a lung*, arrives in the branchiæ. The venous blood of the central parts of the mantle, on the contrary, does not pass into the respiratory organs, but arrives directly in the auricle of the heart, like the venous blood of the walls of the vestibule of the *corpus Bojani* and that of the partitions of the branchial walls. The arterial circulation, consequently, is not completely isolated from the venous. The afflux of the blood into the branchiæ takes place across the vessels of the *corpus Bojani*, which constitutes a sort of *rete mirabilis* between the median venous sinus and the branchial arteries.

Langer was unable to ascertain the presence of an aquiferous system in the *Anodonta*. He nevertheless convinced himself of the existence of a direct communication between the vascular system and the exterior. It is the *corpus Bojani* that serves for the absorption of water. The aperture which was described even by Bojanus under the name of *respiratory orifice*, leads into the space which Keber has called the vestibule, and which is itself in direct communication with the proper cavity of the *corpus Bojani*. These two cavities are only enlargements of a long viscus twisted in different directions, and of which the extremity opposite to the orifice of the organ of Bojanus is nothing but the well-known aperture of communication of the pericardium. The water is thus conducted into the pericardium. The two orifices which Keber has described in the latter at the side of the rectum are constant; they lead into the venous network of the mantle.

Analogous observations have been made by Gegenbaur in the Heteropoda, by Agassiz in the Lamellibranchiata, &c. Langer supposes that the introduction of water from without into the sanguiferous system is for the purpose of furnishing calcareous salts required for the formation of the shell. We must confess that we do not know why the carbonate of lime should be furnished in this way rather than any other.—*Sitzungsber. der Akad. zu Wien*, 1856, p. 150. *Abstract in Bibl. Univ. de Genève*, Nov. 1856, p. 252.

* This organ, known under the name of *corpus Bojani*, is generally considered as the kidney. It is to be noted, however, that Schlossberger, in some recent investigations, was unable to discover in it the least trace of uric acid.